

AMENDMENTS TO THE SPECIFICATION

The title of the invention has been amended as follows:

EXPRESSION OF TREHALOSE 6-PHOSPHATE BIOSYNTHETIC
SYNTHASE AND TREHALOSE 6-PHOSPHATE PHOSPHATASE GENES IN
PLANT[[S]] PLASTIDS

On page 1, after the title, the first paragraph has been amended as follows:

The application is a divisional of U.S. Application No. 09/894,799, filed June 28, 2001, which is a divisional of U.S. Application No. 09/262,615, filed March 4, 1999, now abandoned, which claims benefit of U.S. provisional Application No. 60/077,665, filed March 11, 1998. The above applications are incorporated herein by reference in their entireties.

The second paragraph on page 20 has been amended as follows:

In its broadest sense, the term "substantially similar", when used herein with respect to a nucleotide sequence, means a nucleotide sequence corresponding to a reference nucleotide sequence, wherein the corresponding sequence encodes a polypeptide having substantially the same structure and function as the polypeptide encoded by the reference nucleotide sequence, e.g. where only changes in amino acids not affecting the polypeptide function occur. Desirably the substantially similar nucleotide sequence encodes the polypeptide encoded by the reference nucleotide sequence. The percentage of identity between the substantially similar nucleotide sequence and the reference nucleotide sequence desirably is at least 80%, more desirably at least 85%, preferably at least 90%, more preferably at least 95%, still more preferably at least 99%. Sequence comparisons are carried out using a Smith-Waterman sequence alignment algorithm (see e.g. Waterman, M.S. Introduction to Computational Biology: Maps, sequences and genomes. Chapman & Hall. London: 1995. ISBN 0-412-99391-0; or at <http://www.htc.usc.edu/software/seqaln/index.html>). The localS program, version 1.16, is used with following parameters: match: 1, mismatch penalty: 0.33, open-gap

penalty: 2, extended-gap penalty: 2. A nucleotide sequence "substantially similar" to reference nucleotide sequence hybridizes to the reference nucleotide sequence in 7% sodium dodecyl sulfate (SDS), 0.5 M NaPO₄, 1 mM EDTA at 50°C with washing in 2X SSC, 0.1% SDS at 50°C, more desirably in 7% sodium dodecyl sulfate (SDS), 0.5 M NaPO₄, 1 mM EDTA at 50°C with washing in 1X SSC, 0.1% SDS at 50°C, more desirably still in 7% sodium dodecyl sulfate (SDS), 0.5 M NaPO₄, 1 mM EDTA at 50°C with washing in 0.5X SSC, 0.1% SDS at 50°C, preferably in 7% sodium dodecyl sulfate (SDS), 0.5 M NaPO₄, 1 mM EDTA at 50°C with washing in 0.1X SSC, 0.1% SDS at 50°C, more preferably in 7% sodium dodecyl sulfate (SDS), 0.5 M NaPO₄, 1 mM EDTA at 50°C with washing in 0.1X SSC, 0.1% SDS at 65°C.

The Abstract has been amended as follows:

The invention provides novel transgenic plants which express trehalose 6-phosphate synthase and trehalose 6-phosphate phosphatase in their plastids, including plants in which the enzyme is expressed ~~biosynthetic genes, e.g. under control of an inducible or tissue-specific promoter through the use of a nuclear-encoded transactivator, which are developmentally normal, together with methods for improving stress tolerance in said plants, methods of improving food quality, and other methods of making and using the plants of the invention. The invention also provides nucleotide sequences encoded novel biosynthetic enzymes.~~